



# Grand Calumet River Area of Concern Aesthetics Monitoring Review



CARE Workgroup Meeting  
February 26, 2019

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# Reason for Aesthetics Monitoring

## **11. Degradation of Aesthetics**

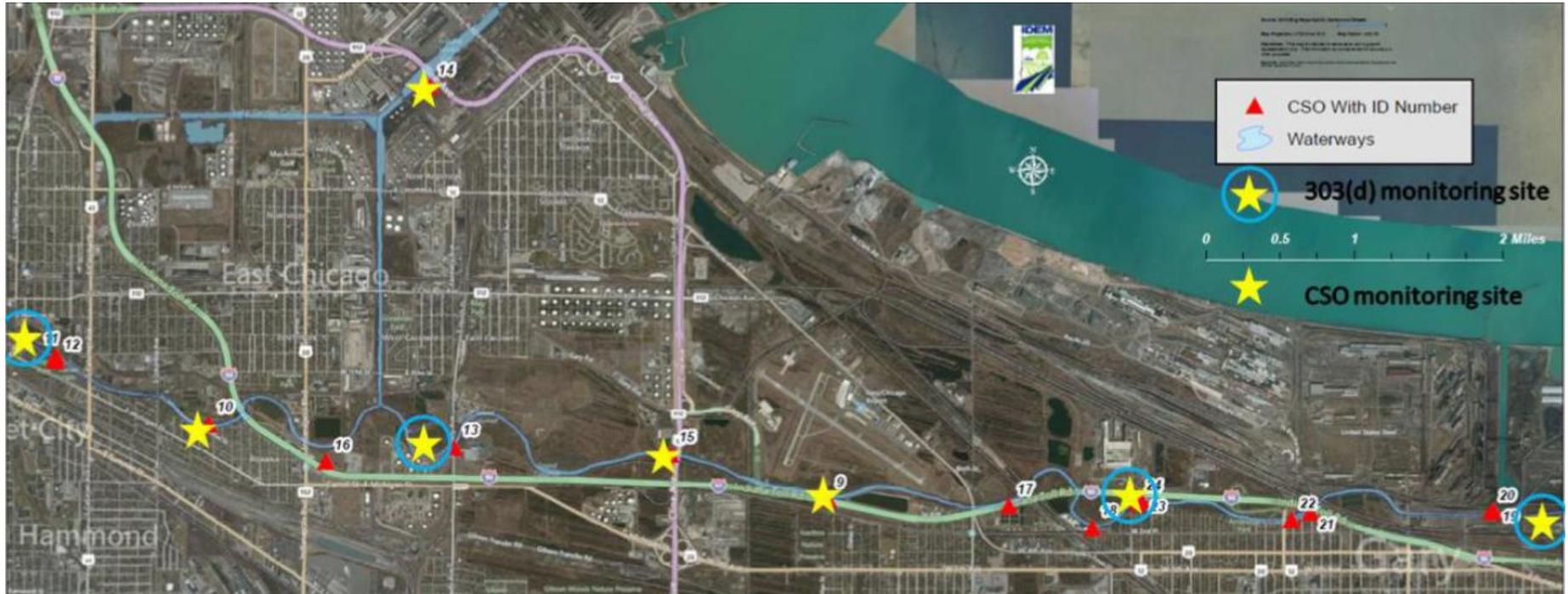
- **State of Indiana Delisting Target**

- The general surface water quality shall meet the standards outlined in 327 Indiana Administrative Code 2-1.5-8 to the extent practical and possible

This section is summarized as:

- Free from substances, materials, floating debris, oil, or scum attributable to municipal, industrial, agricultural, and other land use practices, or other discharges that:
  - Will settle to form putrescent or otherwise objectionable deposits
  - Are in amounts sufficient to be unsightly or deleterious
  - Produce color, visible oil sheen, odor, or other conditions in such a degree as to create a nuisance

# Monitoring Location Map



- GCR 46 Grand Calumet River at U.S. Steel – monitored in 2018
- GCR-37 Grand Calumet River Bridge on Kennedy Ave.
- GCR-42 Grand Calumet River Bridge on Bridge Street
- GCR-34 Grand Calumet River Bridge on Hohman Ave.
- 002C CSO-Michigan Avenue (Arcelor Mittal Boat Launch)
- 003C CSO-Alder Street Lift Station at Cline Avenue – monitored in 2018
- 008C CSO-Polk Street at East Interceptor
- 002C CSO-Columbia Avenue – monitored in 2018

# Area of Concern Aesthetics Monitoring

- Baseline study monitoring conducted May-November in 2013 and 2014
- Final report of baseline study generated in June 2015
- First round of follow-up monitoring conducted March-November 2016
- Confirmatory round of monitoring conducted April-November 2017
- Continuation of monitoring at 3 sites in 2018



*A big **THANK YOU** to Nick Ream and Joel Armstrong for their field monitoring efforts!*



# Field Monitoring: Data Sheet

## Appendix B

### Grand Calumet River/Indiana Harbor Ship Canal AOC Aesthetics Monitoring Data Sheet

Date: \_\_\_\_\_ Site Description: \_\_\_\_\_

Time: \_\_\_\_\_ G.P.S. Coordinates: \_\_\_\_\_

Crew: \_\_\_\_\_

Name of person filling out form: \_\_\_\_\_

Weather: time of monitoring: \_\_\_\_\_

(Include: air temp(°F), sky conditions, and any rain event)

Weather: past 24 hrs: \_\_\_\_\_

(Include: air temp(°F), sky conditions, and any rain event)

#### WATER CLARITY (pick one)

- Clear
- Slightly Turbid
- Moderately Turbid
- Highly Turbid
- Opaque

#### ODOR

- None/Natural
- Musty:
  - Faint  Strong  None
- Sewage/Fishy:
  - Faint  Strong  None
- Septic:
  - Faint  Strong  None

#### WATER COLOR

- (pick one color and one qualifier)
- Clear  Brown  Green  Yellow
- Grey  Black  Milky/White
- Other: \_\_\_\_\_
- Light  Medium  Dark

#### VISIBLE DEBRIS/OBVIOUS POLLUTION

##### (Upstream)

- Foam  Oil  Film  None
- Trash: Floating  Fixed  None
- Solids: Floating  Fixed  None
- Floating Scum  None

Deposits: \_\_\_\_\_

Describe: \_\_\_\_\_

Percent Coverage: \_\_\_\_\_

##### (Downstream)

- Foam  Oil  Film  None
- Trash: Floating  Fixed  None
- Solids: Floating  Fixed  None
- Floating Scum  None

Deposits: \_\_\_\_\_

Describe: \_\_\_\_\_

Percent Coverage: \_\_\_\_\_

##### (At Site)

- Foam  Oil  Film  None
- Trash: Floating  Fixed  None
- Solids: Floating  Fixed  None
- Floating Scum  None

Deposits: \_\_\_\_\_

Describe: \_\_\_\_\_

Percent Coverage: \_\_\_\_\_

ADDITIONAL COMMENTS/OBSERVATIONS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

#### Photo Log:

(Record photo description and label/number)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

\_\_\_\_\_

# Field Monitoring

Visual observations were collected from surface water at the site, upstream, and downstream for these parameters:

- Visible Debris/Obvious Pollution (Floating and/or Fixed):
  - Foam Presence
  - Oil Presence
  - Film Presence
  - Solids with a notation on whether natural or not
  - Floating Scum
  - Deposits
- Percent Coverage of above

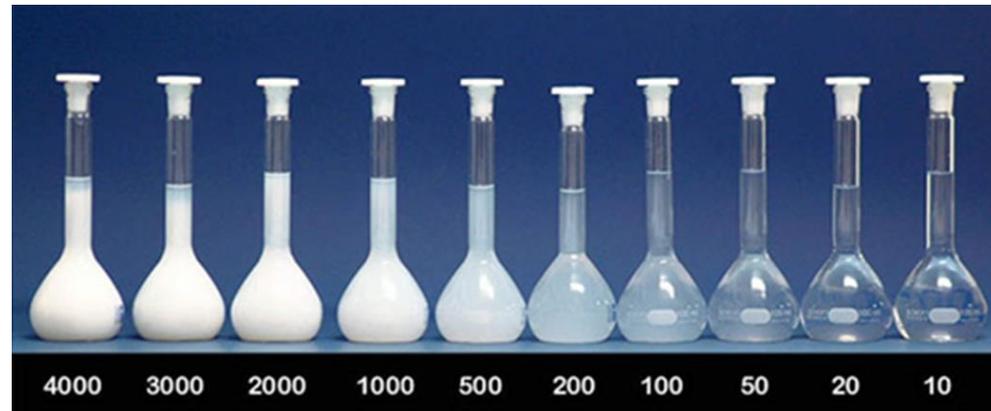
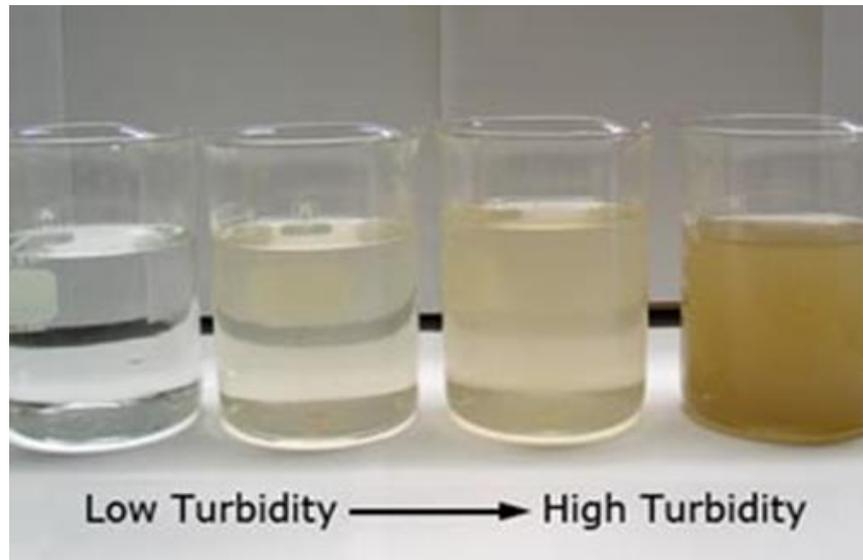


*Columbia Ave Sample from  
5/23/2013*

# Field Monitoring

Additional observations were collected from a surface water grab sample at the site for these parameters:

- Water Clarity (Clear, Slightly Turbid, Moderately Turbid, Highly Turbid, Opaque)



# Field Monitoring

- Odor Type (None/Natural, Sewage/Fishy, Musty, Septic) and Qualifier (Faint or Strong)
- Water Color (Clear/Colorless, Brown, Green, Yellow, Grey, Black, Milky/White) and Qualifier (Light, Medium, Dark)



# Field Monitoring

Photos of each location (at site, upstream, downstream, and sample jar/beaker) were taken during each monitoring event

Any additional observations of the area or waterway were noted as appropriate:

- Pipe discharge
- Dredging
- Wildlife present



# Alder St. (Cline Avenue) – Upstream

**2013**

**2014**



**2016**

**2017**



# Alder St. (Cline Avenue) – Downstream

**2013**



**2014**



**2016**



**2017**



# Alder St. (Cline Avenue) – At Site

**2013**



**2014**



**2016**



**2017**



# Alder St. (Cline Avenue) – August 2018

Upstream



Downstream



At Site



“Log Jam”



# U.S. Steel – Upstream

**2013**



**2014**



**2016**



**2017**



# U.S. Steel – Downstream

2013



2014



2016



2017



# U.S. Steel – At Site

**2013**



**2014**



**2016**



**2017**



# U.S. Steel – August 2018

**Upstream**



**Downstream**



**At Site**



**Sample**



# Columbia Avenue – Upstream

**2013**



**2014**



**2016**



**2017**



# Columbia Avenue – Downstream

**2013**



**2014**



**2016**



**2017**



# Columbia Avenue – At Site

**2013**



**2014**



**2016**

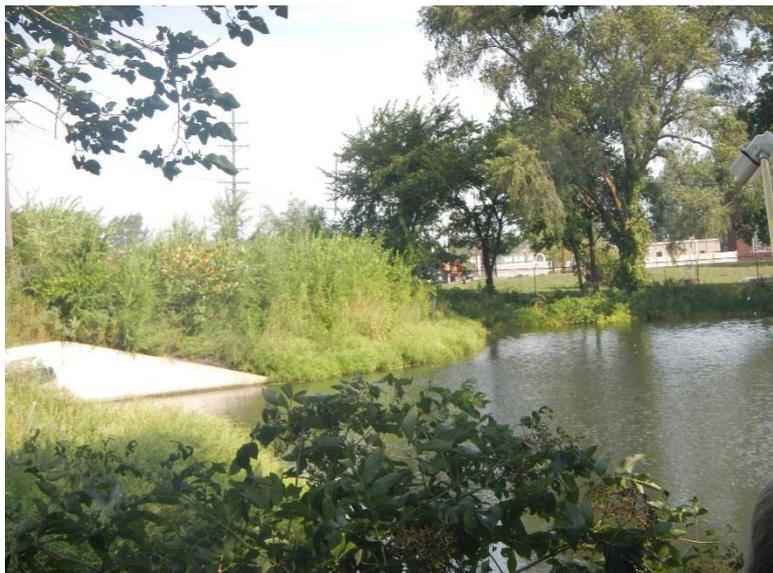


**2017**

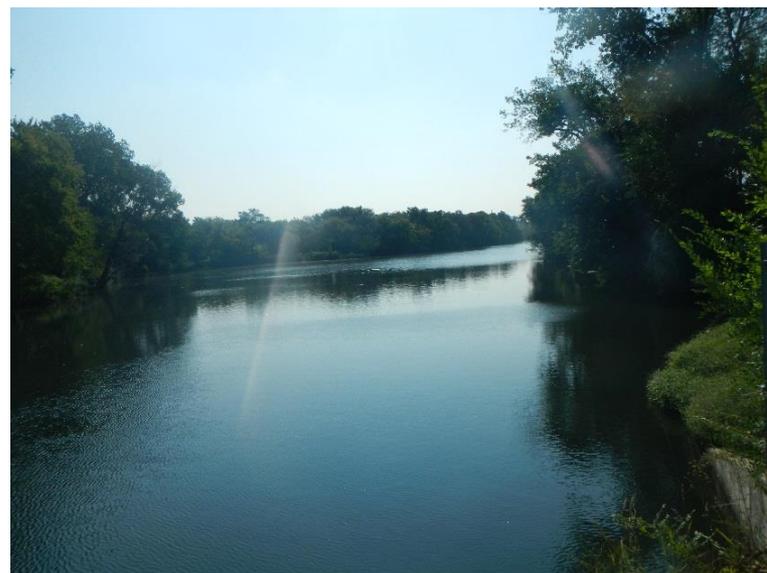


# Columbia Avenue – August 2018

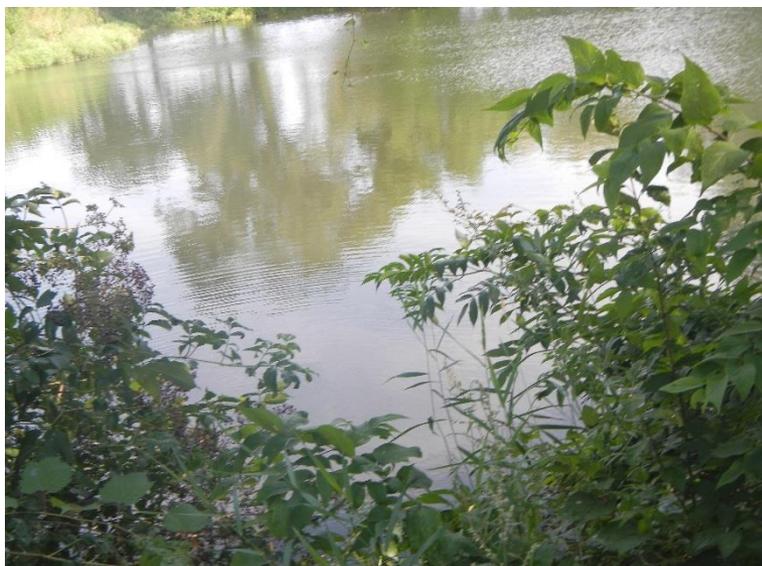
Upstream



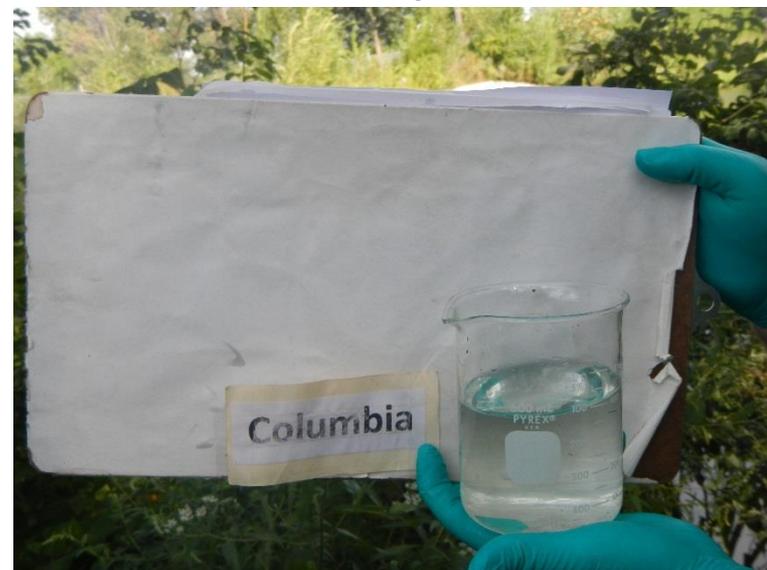
Downstream



At Site



Sample





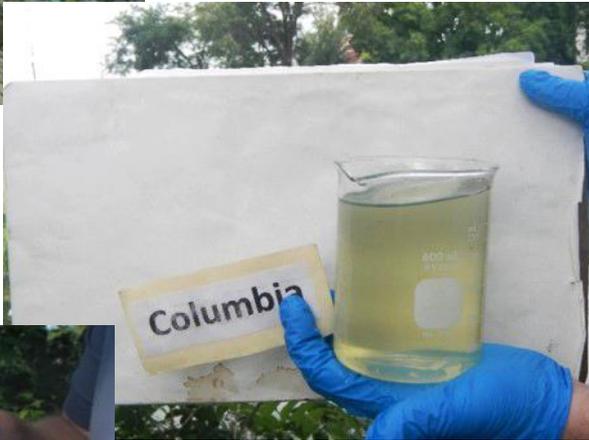
# Data Scoring

- For each monitoring site, scoring was completed for each parameter and qualifier individually
- Scoring was only completed for parameters of qualifiers that exhibited three (3) or more times in the field over the course of the monitoring period
- The number of times the parameter or qualifier exhibited in the field was multiplied by a variable score (determined prior to monitoring)

# Data Scoring

Site: Columbia Ave.

| Parameter                               | Score only if shown to be a persistent problem       | Frequency During the year (only persistent issues, occurring 3 times or more, will be scored) | Total Score (Variable Score x Frequency) |
|---|--|---|--|
| <b>Water Clarity</b>                    |  |   |  |
| Clear                                   | 0  | 6   | 0  |
| Slightly Turbid                         | 0  | 3   | 0  |
| Moderately Turbid                       | 0  | 4   | 0  |
| Highly Turbid                           | 1  | 3   | 3  |
| Opaque                                  | 2  | N/A   | N/A                                      |
| Subtotal                                |  |   | 3  |
| <b>Odor Type</b>                        |  |   |  |
| Natural/None                            | 0  | 3   | 0  |
| Musty                                   | 1  | 4   | 4  |
| Sewage/Fishy                            | 1  | 4   | 4  |
| Septic                                  | 1  | 4   | 4  |
| <b>Odor Qualifier</b>                   |  |   |  |
| Faint                                   | 1  | 7   | 7  |
| Strong                                  | 2  | 6   | 12                                       |
| Subtotal                                |  |   | 31                                       |
| <b>Water Color</b>                      |  |   |  |
| Clear                                   | 0  | 7   | 0  |
| Brown                                   | 0  | N/A   | N/A                                      |
| Green                                   | 1  | N/A   | N/A                                      |
| Yellow                                  | 1  | 3   | 3  |
| Grey                                    | 1  | N/A   | N/A                                      |
| Black                                   | 2  | N/A   | N/A                                      |
| Milky/White                             | 2  | N/A   | N/A                                      |
| <b>Color Qualifier</b>                  |  |   |  |
| Light                                   | 0  | 4   | 0  |
| Medium                                  | 1  | 4   | 4  |
| Dark                                    | 2  | N/A   | N/A                                      |
| Subtotal                                |  |   | 7  |
| <b>Visible Debris/Obvious Pollution</b> |  |   |  |
| Foam Present                            | 1  | N/A   | N/A                                      |
| Oil Present                             | 2  | N/A   | N/A                                      |
| Film Present                            | 1  | N/A   | N/A                                      |
| Trash                                   | 1  | N/A   | N/A                                      |
| Solids (non- natural debris)            | 2  | 38  | 76                                       |
| Floating Scum                           | 1  | N/A   | N/A                                      |
| Deposits                                | 1  | 11  | 11                                       |
| <b>Percent Coverage</b>                 | (0-25%)=0<br>(26-50%)=1<br>(51-75%)=2<br>(76-100%)=3 | 76-100%   | 3  |
| <b>TOTAL SCORE</b>                      |  |   | <b>131</b>                               |





# Scoring Results and BUI Tracking

| Locations                                    | Round 1<br>(5/2013 -<br>11/2014)<br>16 months | Round 2<br>3/2016 -<br>11/2016<br>9 months | Round 3<br>4/2017 -<br>11/2017<br>8 months | Round 4<br>4/2018 -<br>11/2018*<br>7-8 months |
|--|---|--|--|---|
| U.S. Steel                                   | 58  | 19   | 9  | 9   |
| Hohman Avenue                                | 51  | 33   | ★  |   |
| Kennedy Avenue                               | 8   | ★  | ★  |   |
| Bridge Street                                | 0   | ★  | ★  |   |
| Polk Street                                  | 0   | ★  | ★  |   |
| Cline Avenue/Alder Street                    | 25  | 21   | 23   | 22  |
| Columbia Avenue                              | 134   | 15   | ★  | ★   |
| Michigan Avenue (Arcelor Mittal Boat Launch) | 15  | ★  | ★  |   |

**Key:****MEETS REMOVAL CRITERIA**

Baseline

Improving or Unchanging

Declining

Not Monitored

**\*Columbia Ave and Cline Ave/Alder St sites were only monitored from 4/2018 – 10/2018**



# Summary

- After 4 years of monitoring, 6 of the 8 sites are now meeting the BUI removal target, with the exceptions of Alder St. (Cline Ave) and U.S. Steel
- Alder St. at Cline Avenue still exhibits oil sheens, foaming, and film at the upstream “log jam” most likely coming from the “asphalt lagoons” just Northeast of the Cline Avenue bridge
- Alder St. also experiences trash accumulation at the “log jam” that is unsightly
- U.S. Steel site has improved dramatically over the years, but still has unsightly trash accumulation

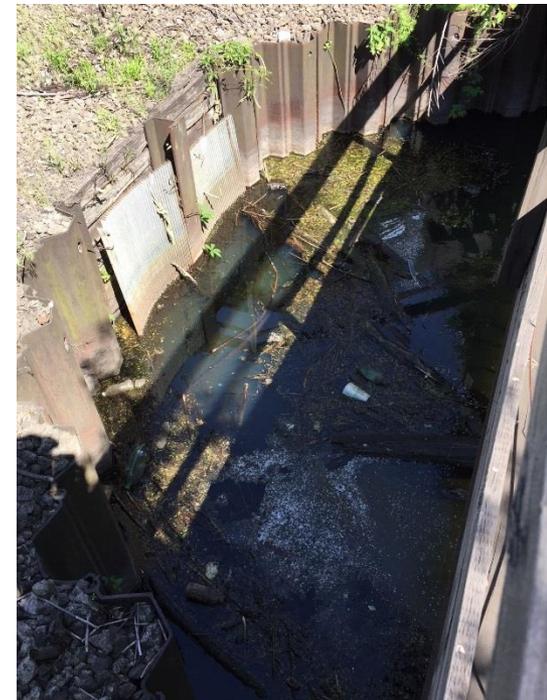
# Next Steps

- Determine potential corrective actions for sites not meeting the removal criteria

Accumulation at Alder St./Cline Avenue



Trash at U.S. Steel



# Thank you!



IDEM's Nick Ream preparing for sample collection  
at Alder St./Cline Avenue on July 20, 2018